

**IMPLEMENTATION OF *E-LEARNING POLICY* IN THE RECOVERY OF EDUCATION POST HYDROMETEOROLOGICAL DISASTER IN ACEH PROVINCE 2025**

**(Systematic Literature Review (SLR) Approach and Document Analysis)**

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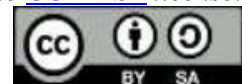
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**ABSTRACT**

The hydrometeorological disaster that occurred in several places in Aceh at the end of 2025 caused a major impact on the continuity of the education sector, especially in terms of access, continuity of learning, and quality of infrastructure. Damage to school facilities and infrastructure and disruption to student mobility made education a public issue that requires fast, adaptive, and measurable policy intervention. As an innovative response, in 2026 a support program for 1.2 million e-learning PINs was launched, initiated by the Police Science College (STIK) of the Indonesian National Police Education and Training Institute (Lemdiklat Polri) in collaboration with the I Love My Country Indonesia (ILMCI) Group, with distribution support by the Aceh Regional Police and technical follow-up by the Aceh Education Office. This program is aimed at affected areas, especially in Aceh Singkil Regency and Lhokseumawe City, with a target of 362,617 students in 2,805 schools from elementary to high school levels. This study aims to evaluate the implementation of the e-learning PIN assistance policy that functions to support the recovery of the education sector after the disaster. The method used is a qualitative descriptive qualitative approach by conducting Literature review. The findings of this study indicate that this policy plays an important role in supporting the sustainability of learning and expanding access to digital education. However, its implementation still faces several challenges, such as a lack of adequate infrastructure, minimal preparation of the workforce, and less than optimal coordination between sectors. This finding is in line with the views on policy implementation explained by George C. Edward III, highlighting that communication, resources, attitudes, and bureaucratic organization play a crucial role in determining the success of a policy.

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## INTRODUCTION

Aceh Province is one of the regions in Indonesia that is highly vulnerable to disasters related to hydrometeorological phenomena such as floods and landslides. High rainfall intensity, geographic conditions, and changes in land use are factors that increase this risk. A disaster occurring in late 2025 would not only affect physical infrastructure and economic activity but also disrupt public services, including education.

Damage to school facilities, disrupted transportation access, and the socioeconomic situation of the community after the disaster resulted in the educational process being unable to run effectively. From a public policy perspective, this situation is considered a public problem because it relates to the basic rights of citizens, as stipulated in the constitution. The state has a responsibility to maintain the continuity of education, including in emergency situations.

There is a policy gap between the ideal that education should continue and the reality on the ground, where learning activities have stalled or significantly declined in quality. If this situation is not addressed immediately, it will likely result in a loss of learning, an increase in the number of students dropping out of school, and a widening of educational disparities between regions.

In response to this problem, in 2026, a 1.2 million PIN e-learning assistance program was launched, held by STIK Lemdiklat Polri in collaboration with ILMCI Group. The distribution of aid was carried out with the assistance of the Aceh Regional Police, while the technical implementation was carried out by the Aceh Education Office. This program focuses on areas that are heavily impacted, especially Aceh Singkil Regency and Lhokseumawe City, with a target of 362,617 students in 2,805 schools from elementary to high school levels.

This policy is designed as a tool to restore education using digital technology, so that students can continue to access learning materials independently even though the physical school infrastructure has not been fully restored. However, the large scale of the policy and the involvement of many parties from various sectors present unique challenges in its implementation. This effort is also in line with the objectives of the Sustainable Development Goals (SDGs), particularly goal 4, namely ensuring inclusive, equitable, and quality education for all.

## LIBRARY REVIEW

### Public Policy and Implementation

Public policy is an instrument used by the government to address societal problems in a systematic and orderly manner. In the public policy cycle, the implementation phase plays a crucial role because it is the phase in which political decisions are translated into administrative actions. Often, theoretically and conceptually formulated policies fail to achieve the desired results due to ineffective implementation. Therefore, analyzing policy implementation is crucial for evaluating the extent to which policies achieve their stated objectives.

### **George C. Edward III's Policy Implementation Theory**

The study we conducted adopted the policy implementation theory put forward by George C. Edward III, which identified four main elements that influence successful implementation, namely :

1. Communication – clarity, consistency, and delivery of information regarding policies to implementers and target groups.
2. Resources – includes budget, manpower, information, along with the necessary facilities and infrastructure.
3. Disposition – attitude, commitment, and the extent to which the implementer accepts the policy.
4. Bureaucratic Structure – division of responsibilities, standard operating procedures, and arrangements for cooperation between institutions.

These four variables are interconnected and influence the success of policy implementation in the field, including in the context of digital-based education recovery after a disaster.

### **RESEARCH METHODS**

This study uses a *Systematic Literature Review* (SLR) analysis method to analyze the implementation of the PIN *e-learning* assistance policy in supporting post-disaster education recovery in Aceh. This method was applied to systematically examine and combine various scientific literature sources with the aim of gaining a deep understanding of the implementation of digital learning policies.

The data collection process was carried out by searching for data from various secondary sources, such as research journal articles, scientific books, government policy documents, and official reports relevant to the implementation of e-learning programs in the education sector. To conduct the literature search, academic databases such as Google Scholar were used and various research journals related to the topics of education policy and online learning.

The steps in the Systematic Literature Review method include the process of identifying the literature, selecting appropriate sources, collecting data, and combining research results. The selected literature is adjusted to criteria related to the topic of implementing *e-learning* policies, post-disaster education recovery, and analyzing public policies in the education sector.

Furthermore, data analysis was conducted by utilizing the theoretical framework of policy implementation proposed by George C. Edward III emphasizing four main factors that play a role in the success of policy implementation, namely communication, resources, attitudes, and organizational structure. Information analysis was conducted in stages such as information reduction, data presentation, and drawing conclusions based on those explained by Matthew B. Miles and A. Michael Huberman in the qualitative data analysis method.

In this way, the research is expected to provide more orderly information regarding the various factors that influence the success and challenges in implementing e-learning assistance policies to support education recovery in disaster-affected areas.

## RESULTS AND DISCUSSION

The hydrometeorological disaster that struck several areas in Aceh significantly impacted the education sector . Damage to school facilities , disruption to transportation , and the socioeconomic conditions of affected communities prevented normal learning processes . In this situation , various educational recovery efforts are needed to ensure that teaching and learning can continue , even under limited circumstances .

In response to this situation , the local government, along with relevant institutions , introduced the e-learning PIN assistance program as a digital technology- based education recovery strategy . This program aims to provide students with access to online learning platforms so they can continue to access course materials even if in- person learning cannot be fully implemented .

The use of digital technology is expected to provide students with flexibility in accessing learning materials , both from home and from temporary shelters after a disaster . Therefore , this policy is not solely about maintaining educational continuity but also part of the education system's efforts to adapt to emergency situations caused by disasters .

To understand how this policy is practically implemented , this study utilizes a theoretical framework regarding policy implementation . As stated by George C. Edward III. According to Edward III (1980), success in policy implementation is determined by four factors : communication , resources , implementer attitudes , and organizational structure . These four factors are used as the basis for analysis to assess the implementation of the PIN e-learning assistance program in post-disaster education recovery efforts in Aceh.

### 1. Communication in Policy Implementation

Communication is a crucial factor in the successful implementation of public policy . According to Edward III (1980 ) , successful communication in policy implementation requires three main components : information transmission , message clarity , and message consistency . These three elements determine the extent to which the policy is understood by implementers in the field . In implementing the PIN e-learning assistance program in Aceh Province , policy communication was conducted through various means , both formal and informal .

The regional government through the Department of Education conveys information about the policy to several schools through official letters , coordination meetings , and socialization activities involving school principals and educators . In addition , information on the use of PIN e-learning is also presented to students and parents so that they understand how to access the digital learning platform that has been provided . The socialization aims to guarantee that all parties involved in the implementation of the policy understand the purpose of the program as well as its implementation mechanism .

With structured communication , it is hoped that misunderstandings will occur in policy implementation at the school level and at other implementing levels . However , in practice , several obstacles remain in the policy communication process . One of the biggest problems is limited access to communication in some disaster-affected areas . Damage to telecommunications infrastructure and certain geographic conditions mean that information cannot always be delivered quickly and evenly . Furthermore , there are differences in the

level of understanding of information technology among teachers and students . Not all educators have the same level of digital literacy , so some teachers still need assistance in using online learning platforms . This condition affects the effectiveness of delivering learning materials through the e -learning system .

Thus , it can be concluded that communication in implementing the e-learning PIN assistance policy has been conducted through a fairly structured mechanism . However , improvements in the quality of outreach , the provision of clearer technical guidance , and support for educators are still needed to ensure the policy is understood and implemented optimally .

## 2. Resources in policy implementation

The availability of resources is a major factor influencing the successful implementation of public policy. According to Edward III (1980), resources include human resources , financial resources , and the supporting facilities and infrastructure needed to implement the policy .

In implementing the PIN e-learning assistance program in Aceh, resource availability is a crucial factor in determining the policy 's success . Funding -wise , the program is supported by government policies that provide flexibility in the use of the Education Unit Operational Assistance Fund (BOSP). This policy allows schools to utilize a portion of their operational budget to support digital - based learning . However , the implementation of this policy still faces various resource limitations . One of the biggest challenges is the unequal distribution of internet access across Aceh .

Some disaster- affected areas have inadequate internet connection quality , making it difficult for students to use online learning platforms . Furthermore , not all students have devices such as smartphones, laptops, or tablets that are adequate for online learning . **The** economic conditions of disaster- affected communities also affect families ' ability to provide technological devices for their children . This situation creates a gap in access to digital education .

From a human resources perspective , teachers ' ability to manage technology - based learning is also a crucial factor . Teachers are not only required to understand how to use e-learning platforms, but also to be able to design interactive learning methods that are appropriate to the characteristics of online learning . Therefore , improving teachers' skills through training and mentoring programs is crucial to the successful implementation of this policy . By improving the digital competence of educators , it is hoped that technology - based learning processes will be more effective and high - quality .

## 3. Implementers' disposition or attitude (beyyada)

Disposition in policy implementation reflects the attitude , commitment , and level of acceptance of the implementers towards the policy they are implementing . Edward III (1980) stated that a positive attitude from policy implementers can increase the chances of success in implementing the policy .

In the implementation of the PIN e-learning assistance program in Aceh, policy implementers generally showed a fairly positive attitude towards this program . This is

evident in the cooperation between various agencies , such as local governments , education offices , police officers , and educators in supporting the implementation of the assistance program . This collaboration between institutions demonstrates a shared commitment to ensuring the continuity of education for students affected by the disaster . The PIN e-learning assistance program is seen as one solution that allows learning to continue even under limited conditions .

In school settings , many teachers also expressed positive views on the use of technology in teaching and learning . They recognized that digital technology can help students continue to learn even when face - to - face learning cannot resume normally .

However , the level of preparedness of policy implementers varies . Some teachers still require additional training to improve their skills in managing online learning . Furthermore , the shift from face-to - face to digital learning has increased the workload for educators .

#### 4. Policy structure in policy implementation

Bureaucratic structure is a crucial factor in policy implementation because it is linked to the division of tasks , coordination mechanisms , and work procedures between the agencies involved . According to Edward III (1980), a clear bureaucratic structure will facilitate policy implementation because each party understands their respective roles and responsibilities .

When implementing the PIN e-learning assistance program in Aceh , the bureaucratic structure includes a number of institutions with various tasks and functions . The regional government through the Education Office is responsible for coordinating the implementation of the program at the regional level , including data collection on schools receiving assistance , delivery of policy information , and monitoring the implementation of online learning .

In addition , the police also played a role in supporting the implementation of the program , especially in the distribution of aid to disaster-affected areas . The involvement of the police demonstrates cross- sector collaboration in supporting post-disaster education recovery . The collaboration between government agencies and security forces is an example of synergy in the provision of public services in the field of education . This collaborative approach is very important in post-disaster conditions because the recovery of the education sector requires support from various parties .

#### 5. Policy Implications for Education Recovery

The PIN e-learning assistance program plays a crucial role in maintaining the continuity of the educational process in disaster- affected areas . Through the use of digital technology , students can still access learning materials even though face-to -face learning activities cannot be carried out normally . However , the implementation of this policy also shows that the implementation of digital learning requires thorough preparation , both in terms of technological infrastructure , human resource development , and an effective management system . Going forward , the e-learning policy should not only be seen as a temporary measure in emergency situations , but also as an element in a long -term plan to expand access and improve the quality of education, especially in areas with geographical limitations and certain socio - economic conditions .

## CONCLUSION

According to research findings, it can be concluded that the implementation of the 1.2 million PIN e-learning assistance policy has been implemented as a strategic step to support the recovery of the education sector after the hydrometeorological disaster in Aceh Province. This policy offers an alternative solution to ensure the continuity of the teaching and learning process through digital technology, so that students can continue to access learning materials even though in-person learning activities are hampered by infrastructure damage and emergency situations after the disaster.

Policy analysis using the theory proposed by George C. Edward III shows that the achievement of success in policy implementation is influenced by four main factors, namely communication, resources, attitudes or dispositions of implementers, and bureaucratic structures. In its implementation, the delivery of policy information is carried out through coordination between local governments, education offices, and schools that are the target of the program. However, limited access to communication in several disaster-affected areas remains an obstacle in the process of disseminating policy information evenly to all parties involved.

In terms of resources, budget support and the existence of assistance programs are crucial factors in implementing this policy. However, implementation still faces several obstacles, such as limited internet access, a lack of digital devices available to students, and variations in digital literacy skills among teachers. In terms of attitudes, policy implementers generally have a positive view of the program's implementation. However, capacity building through training and mentoring for teachers is still essential for more effective technology-based learning.

In addition, the bureaucratic structure, which involves intersectoral collaboration between local governments, educational institutions, and the police, demonstrates synergy in supporting post-disaster educational recovery. However, coordination between institutions needs to be strengthened to ensure more effective and integrated policy implementation.

Overall, the PIN e-learning assistance program has made a significant contribution to maintaining the continuity of education in disaster-affected areas. However, its successful implementation depends heavily on the readiness of digital infrastructure, improved human resource capabilities, and strengthened coordination between institutions. Therefore, the development of digital learning systems must continue as part of a long-term strategy to strengthen the resilience of the education sector in the face of future emergencies and disasters.

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